

AYURVEDIC MANAGEMENT OF IDIOPATHIC PULMONARY FIBROSIS (IPF) - A CASE REPORT

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Article Received on 05/08/2024

Article Revised on 25/08/2024

Article Accepted on 15/09/2024

ABSTRACT

Introduction: Idiopathic pulmonary fibrosis (IPF) is defined as a chronic fibrosing interstitial lung disease of unknown etiology, characterized by irreversible loss of lung function due to fibrosis, which manifests as symptoms of increasing dry coughing, dyspnoea and impaired quality of life. **Main Clinical Findings:** 56 years old male patient come to OPD with the complaint of shortness of breath while walking or exertion, dry coughing, gradual weight loss since past 3 years. **Diagnosis:** The patient consulted a local physician, and following various diagnostic imaging procedures, was subsequently referred to a Pulmonologist. The Pulmonologist diagnosed the patient with IPF. **Interventions:** The patient was treated through OPD level with oral medicaments *Talisadi churna* + *Vishana bhasma* + *Svasakuthara rasa* + *Shuddha tankana*, *Vasa ghanavati*, *Tab Shallaki*, *Mallasindura*, *Panchatikta ghrita (shamanartha snehapana)* and *Chyavanaprasa rasayana avaleha*. **Outcome:** The patient experiences symptomatic relief, with improved respiratory sounds at rest. The ability to walk without shortness of breath has been restored, and there is an evident improvement in Peak Expiratory Flow Rate (PEFR). **Conclusions:** Additional research utilizing this treatment regimen for IPF patients will emphasize its reliability and validity.

KEYWORDS: Ayurveda; Dyspnoea; Idiopathic lung fibrosis; Pneumonitis; Lung disease; dry coughing.

1. INTRODUCTION

Idiopathic pulmonary fibrosis (IPF) is defined as a chronic fibrosing interstitial lung disease of unknown etiology, characterized by the histopathological pattern of usual interstitial pneumonia.^[1] Of the over 150 recognized types of interstitial lung disease (ILD), IPF is the more common and one of the most deleterious.^[2]

The prevalence of IPF is 50-200 per 100,000. Importantly, the prevalence of IPF rises dramatically with age; it is virtually absent in patients younger than 50 but is present in an estimated 0.2% of those older than 75.^[3] In large, populated areas such as Brazil, Russia, India, and China (the BRIC region), there may be approximately 2 million people living with IPF.^[4] IPF is commonly diagnosed in the fifth or sixth decade in life, affects men more than women, and is frequently associated with a history of smoking or other environmental exposures. IPF is a variably progressive disease that carries a poor prognosis with an estimated 50% 3–5-year survival. Accordingly, reliance on healthcare services is considerable, contributing to a marked socioeconomic burden of disease.^[5,6]

The COVID-19 pandemic has led to widespread respiratory complications globally. A meta-analysis indicates that a significant number of individuals recovering from COVID-19 show signs of pulmonary fibrosis, which can persist over an extended period. The development of post-COVID pulmonary fibrosis (PCPF) is particularly associated with the severity of the initial COVID-19 infection and the use of treatments like steroids, immunoglobulins, and antibiotics.^[7]

Due to COVID-19 pandemic over the past five years, which has affected a significant portion of the global population, there is concern that the incidence and prevalence of IPF may increase in the future.

Idiopathic pulmonary fibrosis (IPF) is characterized by irreversible loss of lung function due to fibrosis, which manifests as symptoms of increasing dry coughing and dyspnoea and impaired quality of life. Lung transplantation is limited to minority of patients, and patients primarily rely on antifibrotic therapy plus several supportive/palliative treatments. There is no disease-modifying treatment that can prevent or cure IPF and when extensive fibrosis has become established,

therapies may have little or no impact on disease progression.^[8] Too far, no medication has been shown to enhance survival or appreciably alter the clinical course of IPF. As a result, patients in these situations seek alternative treatment. This case study will emphasize the relevance of Ayurveda in the care of IPF because no research on IPF in Ayurveda has been done.

2. PATIENT INFORMATION

On July 28, 2023, a 56-year-old male patient, married, Cigarette smoker, working as manager in private IT company, came to the outpatient department of *Kayachikitsa* of our hospital. The patient had complained of shortness of breath while walking or exerting himself, unable to walk for more than 100 m, dry coughing over the last 3 years, and weight loss since past two years. The patient was relatively healthy before. The patient got severe dry coughing in June 2020 and has difficulty in walking due to shortness of breath. The patient consulted a local physician, and following various diagnostic imaging procedures, was subsequently referred to Pulmonologist. The Pulmonologist diagnosed the patient with IPF. He has started Tab Pirfenidone (200mg) (half tablet twice a day), Tab Methylprednisolone 16 mg (half tablet twice a day), calcitriol (one capsule once a day), Syp Aerodil-S (15 ml twice a day), and multivitamin (one tablet once a day). The patient got mild relief in breathlessness and coughing with these medications but only for a short duration. After 6 months again the symptoms reappeared with more aggravation despite ongoing medication and patient was hospitalized, there he was treated with Inj Dexona, Inj Hydrocortisone, Inj Zostrum, Inj Augmentin also nebulization done. He quit taking allopathy medication for one-year 2022. In March 2023 he was again hospitalized due to breathlessness, Severe dry coughing and there he was treated with Inj Hydrocortisone, Inj Pantoprazole, Tab Dexa, Tab Lasilactone, Nebulization, O₂ Support and other supportive treatment. Since then, the patient is on corticosteroid medication and but had no marked relief. Therefore, he came to our Hospital for Ayurveda treatment. No positive family history related to IPF was observed.

3. CLINICAL FINDINGS (July 28, 2023)

- Shortness of breath while walking or exertion (since past 3 years)
- Dry Coughing (since past 3 years)
- Gradually weight loss (since past 2 years)

3.1 Findings of physical examination on rest (July 28, 2023)

- BP – 110/70 mm Hg
- Pulse – 80/min, weak
- SpO₂ – 94%
- PEFV – 200/L
- Weight – 50 kg
- General examination: Hyposthenic, clubbing of nails, and pallor on palms and soles.

- Respiratory examination: Very loud & clear bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present.

3.2 Ashtavidh pariksha

1. *Nadi* – *Vatapittaja*
2. *Mala* – Normal stool, one time a day, no distinct smell.
3. *Mutra* – 5–8 times/day and 1-2 times/night, Pale yellow colour
4. *Jihva* – Normal in size shape and colour. No cracks or coating on the surface, *Nirama*
5. *Shabda* – Unable to speak loudly, difficult to speak long sentences, very loud, bilateral basal crackles present.
6. *Sparsha* – Normal
7. *Drik* – Normal
8. *Akriti* – *Krusha sharira* (Hyposthenic).

5. DIAGNOSTIC FINDINGS

- CBC profile, renal function test, liver function test, and other laboratory parameters were within the normal range. ANA and TB tests were also negative.
- The imaging scans are presented in Figures 1

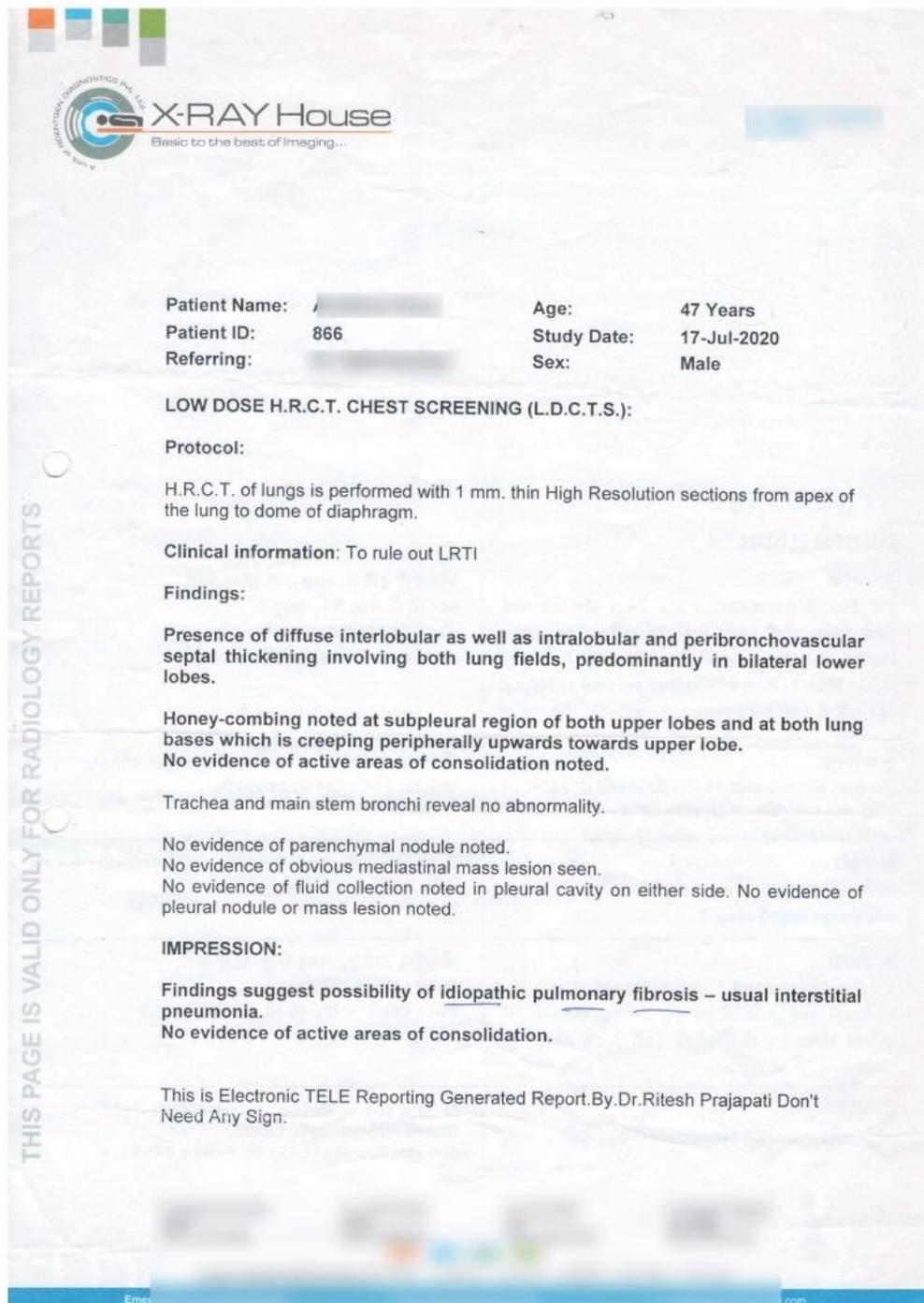


Fig. 1.

6. AYURVEDA TREATMENT

The patient was treated through Oral medication treatment as follows: From 27 July 2023 *Talisadi churna* 3 g + *vishana bhasma* 250 mg + *svasakuthara rasa* 250 mg + *shuddha tankana* 200 mg, was given twice daily with honey, *Vasa ghanavati* 2 tab/3 times, *Tab Shallaki* 1tab/4 times, *Panchatikta ghrita* (*Shamanartha Snehapana*) – 20 ml twice daily was started. On 2nd follow-up *Mallasindura* 250 mg/2 times and *Chyavanaprasa rasayana* 1tbs every morning with warm milk was added. Details of schedule is mentioned in timeline.

Diet

Pathya: Patient was only allowed to take light diet which contains green gram, rice, boil veggies with some spices *marich*, *ajamoda sunthi*, and *turmeric* and also cow ghee.

Apathya: Patients is advised to avoid oily, spicy, fermented food, cold water, dairy product, Cold and humid atmosphere, smoke, dust, fumes and pollens.

4. TIMELINE

Timeline of the study with clinical events and interventions.

TIME	CLINICAL EVENTS	INTERPRETATION
June-2020	Breathlessness on moderate exertion, Dry coughing	Diagnosis imagines done referred to pulmonologist diagnosed with-Idiopathic pulmonary fibrosis. Allopathic medicines - Tab. Perfinidone 200mg, Tab. Methylprednisolone, Tab. calcitriol, Syp Aedil-S, Tab. Multivitamin. Got mild relief.
Dec-2020	Fever, Shortness of breath, Dry coughing, weight loss.	Hospitalized and treated with allopathic medication Inj Dexona, Inj Hydrocortisone, Inj Zostrum, Inj Augmentin also nebulization done.
Jan 2021-Dec 2021	Breathlessness on moderate exertion, Dry coughing (ON/OFF), weight loss.	Ongoing allopathy medicine but no considerable relief.
Jan 2022-Feb 2023	Breathlessness on moderate exertion, dry coughing.	Patient stopped allopathy medication or any medication.
March-2023	Shortness of breath, Severe dry coughing.	Patient was again hospitalized and there treated with Inj Hydrocortisone, Inj Pantoprazole, Tab Dexta, Tab Lasilactone, Nebulization, O ₂ Support and other supportive treatment.
Patient came to P.D.Patel Ayurvedic Hospital		
28 July 2023	Shortness of breath aggravated by walking or exertion (not able to walk more than 100m without feeling shortness of breath), Dry coughing, Weight loss.	Patient is treated on OPD level. <i>Talisadi churna</i> 3 g + <i>Shuddha vishana bhasma</i> 250 mg + <i>svasakuthar rasa</i> 250 mg + <i>shuddha tankana</i> 200 mg, was given twice daily with honey, <i>Vasa ghanavati</i> 2 tab(500MG)/3 times, <i>Tab Shallaki</i> 1tab(300mg)/4 times, <i>Panchtikta ghrita (Shamanartha snehapana)</i> – 20 ml twice daily. (Allopathy medication continue)
11 Aug 2023	Shortness of breath aggravated by walking or exertion, Dry coughing.	Continue ayurvedic treatment same as above. (Allopathic medication continue)
1 Sep 2023	Shortness of breath aggravated by walking or exertion, Dry coughing, Weakness.	Rep Above medication with <i>Mallasindoor rasa</i> 250mg/2 time, <i>Chyavanaprasa rasayana</i> 1tbs every morning with warm milk. (allopathic medications continue)
Sep 2023-March 2024	Patient has relief in Dry coughing, not feeling any kind of weakness, able to walk 2000 m without feeling of shortness of breath.	Continue Ayurveda medication. Advice routine check-up every two week. The allopathic physician has decided to discontinue steroid therapy, considering it no longer necessary.

7. OUTCOMES AND FOLLOW-UP

He was advised to come for routine check-up on every 2 weeks and Peak Expiratory Flow Rate (PEFR) was

observed in each and every visit. Respiratory sounds were documented during each visit at rest, revealing noticeable improvement which mentioned in **Table 1**.

DATE	Respiratory sounds on rest	Able to walk without shortness of breath	PEFR	Weight
28 July 2023	Very loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Unable to complete the walk of 1000 m. Felt shortness of breath on 100meter walk	200/L	50 kg
25 Aug 2023	Loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Felt shortness of breath on 300- meter walk	200/L	49 kg
01 Sep 2023	Loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Felt shortness of breath on 300meter walk	230/L	49.5kg
22 Sep 2023	Loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Felt shortness of breath on 300meter walk	250/L	49.8 kg

20 Oct 2023	Medium loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present.	Felt shortness of breath on 500meter walk	250/L	50 kg
17 Nov 2023	Medium loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present.	Felt shortness of breath on 500-1000meter walk	300/L	50.1 kg
15 Dec 2023	Medium loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present.	Felt shortness of breath on 1000meter walk	340/L	51 kg
12 Jan 2024	Mild loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Felt shortness of breath on 1000meter walk	320/L	51kg
9 Feb 2024	Mild loud bilateral basal crackles, soft bilateral upper and middle lobes rhonchi present	Felt shortness of breath on 1000-1200meter walk	380/L	51kg

8. DISCUSSION

Idiopathic pulmonary fibrosis (IPF) occurs when the lung's inner tissue gets injured, leading to an unusual healing process that results in the formation of thick scar tissue. In allopathy, the interstitial tissue around the air sacs in the lungs is affected. This condition occurs due to various internal or external factors causing harm to the lung tissue, causing it to heal in an abnormal way. This leads to scarring and thickening of the interstitial tissue, making it difficult for oxygen to enter the bloodstream. Patients with IPF often experience difficulty in breathing and dry cough.^[9]

In Ayurveda, *Svasa Roga* serves as a comprehensive term inclusive of all respiratory disorders. According to Ayurvedic principles, the primary internal factors contributing to the onset of this ailment are *vata* and *kapha dosha*, typically originating at the *pitta* site. The aggravated *Vata*, combined with vitiated *Kapha*, obstructs the body channels, disseminating across the system and giving rise to the manifestation of *Svasa* (breathing difficulty).^[10] In this case patient has a history of tobacco chewing and cigarette smoking.

In *Svasaroga Shamshodhana* and *Shamshamana chikitsa* given. *Shamshodhana chikitsa* only performed when *Kapha dosha* is aggravated and patient is physically strong. In *Svasa roga*, *Brihmana* therapy is mentioned for *Krishna rogi* having the degenerative type of changes, so diet and medicaments having *Brihmana guna* were given.^[11]

Pratiloma gati of *vata* is responsible for *svasa roga*. *Talisadi churna* act as a *moodhavatanuloman*. *svasakuthara rasa* act on *svasaroga* due to the action of its ingredients which directly act on *Pranavaha Srotas* which has *vatakaphahara* properties.^[12] *Vishan bhasma* is *Tridosahara* and act of *Pranavahastrotas*.^[13] *Vasa* has *svasa* and *kasahara* properties.^[14] *Shallaki* exhibits properties that pacify *kapha doshas*.^[15] *Shallaki* comprises phytoconstituents known as boswellic acids, which help alleviate dyspnoea.^[16] *Malla sindoor* attributed with properties like *Tridosahara*, *Rasayana*,

Vatakaphashamaka.^[17] *Chyavanaprasha* is *rasayana* which is useful in *shvasa, kasa, krisha* person.^[18]

Furthermore, it is mentioned that *vata* and *kapha* have to be pacified but if not possible then at least *vata* should be pacified and so *brihmana* therapy was given to this patient.^[19] Therefore, *Panchatikta ghrita snehapana* was given which will work as *brihmana* therapy. Moreover, it also helps in softening the fibrosed tissues.

In this case, we observed relief from symptoms. It suggests that extended Ayurvedic treatment may impede the advancement of the disease. However, there is currently a lack of evidence to substantiate this claim, and additional research in this area is needed.

8.1 LESSON FROM THE STUDY

From this patient, we can conclude that Ayurveda treatment given for 5 months was beneficial for IPF patients. This case study is an eye opener for the Ayurveda scholars as symptomatic relief observed with increment of quality of life in such diseases. It indicates that further research conducted based on this treatment plan for patients of IPF will highlight its reliability and validity.

8.2 PATIENT PERSPECTIVE

The patient – “When I came to this hospital, I had severe breathlessness and coughing and therefore, unable to walk even of 100 meters. I could not continuously speak for more than 2 sentences as coughing was interrupted too. Allopathic medicines were also continued but I didn't get too relief with it. Now, with the help of this Ayurveda treatment, I have much relief from all symptoms and I am able to walk 1500 meters without any difficulty and talk continuously. My pulmonologist has suggested to discontinue steroid therapy, considering it no longer necessary, and I feel the same relief as like previous even after the taking half dose of steroids.”

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